(g) Each emergency switchboard must have the following:
(1) An ammeter with a selector switch that connects the ammeter to show the current for each phase.
(2) A voltmeter with a selector switch that connects the voltmeter to show:
(i) Generator voltage of each phase; and
(ii) Bus voltage of one phase.
(3) Ground detection that meets subpart 111.05 for the emergency lighting system.
(4) A frequency meter.
(5) An exciter field rheostat.
(6) A voltage regulator and a voltage regulator functional cut-out switch.
(h) Each direct-current emergency switchboard must have the:
(1) Equipment under §111.30–27 (b) through (d); and
(2) Ground detection under subpart 111.05 for the emergency lighting system.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996]

Subpart 111.33—Power Semiconductor Rectifier Systems

§ 111.33–1 General.

This subpart is applicable to all power semiconductor rectifier systems. In addition to the regulations contained in this subpart, the requirements of §§111.30–11, 111.30–19 and 111.30–21 of this part must be met, if applicable.

§ 111.33–3 Nameplate data.

(a) Each semiconductor rectifier system must have a nameplate of durable material affixed to the unit that meets the requirements of—
(1) Section 10.20.12 of IEEE 45–2002 (incorporated by reference; see 46 CFR 110.10–1); or
(2) Clause 8 of IEC 60092–304 (incorporated by reference; see 46 CFR 110.10–1).
(b) Each semiconductor rectifier system must have a nameplate containing the words ''marine semiconductor rectifier,'' and the following information:
(1) Manufacturer's name and address.
(2) Manufacturer's serial number.
(3) Type.
(4) Rated AC volts.
(5) Rated AC amperes.
(6) Number of phases.
(7) Frequency.
(8) Rated DC volts.
(9) Rated DC amperes.
(10) Ambient temperature range.
(11) Duty cycle.
(12) Cooling medium.
(c) If, on small rectifiers, the information required by paragraph (a) of this section cannot be shown because of space limitations, the nameplate must be at least large enough to contain the manufacturer's name and serial number. The remaining information must be shown on the schematic diagram.

[CGD 74–125A, 47 FR 15236, Apr. 8, 1982, as amended by CGD 94–108, 61 FR 28279, June 4, 1996; USCG–2003–16630, 73 FR 65197, Oct. 31, 2008; USCG–2013–0671, 78 FR 60153, Sept. 30, 2013]

§ 111.33–5 Installation.

Each semiconductor rectifier system must meet the installation requirements, as appropriate, of—
(a) Sections 10.20.2, 10.20.7, and 10.20.8 of IEEE 45–2002 (incorporated by reference; see 46 CFR 110.10–1); or
(b) IEC 60092–304 (incorporated by reference; see 46 CFR 110.10–1).

[CGD 94–108, 61 FR 28279, June 4, 1996, as amended by USCG–2003–16630, 73 FR 65197, Oct. 31, 2008; USCG–2013–0671, 78 FR 60153, Sept. 30, 2013]

§ 111.33–7 Alarms and shutdowns.

Each power semiconductor rectifier must have a high temperature alarm or shutdown, except as provided in §111.33–11.

§ 111.33–9 Ventilation exhaust.

The exhaust of each forced-air semiconductor rectifier system must:
(a) Terminate in a location other than a hazardous location under Subpart 111.105 of this part; and
(b) Not impinge upon any other electric device.

§ 111.33–11 Propulsion systems.

Each power semiconductor rectifier system in a propulsion system must meet sections 4–8–5/5.17.9 and 4–8–5/5.17.10 of ABS Steel Vessel Rules (incorporated by reference; see 46 CFR

110.10–1), except that each one for mobile offshore drilling units must meet the requirements in Part 4, Chapter 3, section 4/3.5.3 of ABS MODU Rules (incorporated by reference; see 46 CFR 110.10–1).

[USCG–2003–16630, 73 FR 65197, Oct. 31, 2008]

Subpart 111.35—Electric Propulsion

§ 111.35–1 Electrical propulsion installations.

Each electric propulsion installation must meet sections 4–8–5/5.5, 4–8–5/5.11, 4–8–5/5.13, 4–8–5/5.17.8(e), 4–8–5/5.17.9, and 4–8–5/5.17.10 of ABS Steel Vessel Rules (incorporated by reference; see 46 CFR 110.10–1), except that each one for mobile offshore drilling units must meet the requirements in part 4, chapter 3, section 4/3.5.3 of ABS MODU Rules (incorporated by reference; see 46 CFR 110.10–1).

[USCG–2003–16630, 73 FR 65197, Oct. 31, 2008]

Subpart 111.40—Panelboards

§ 111.40–1 Panelboard standard.

Each panelboard must meet section 17.1 of IEEE 45–2002 (incorporated by reference; see 46 CFR 110.10–1).

[USCG–2003–16630, 73 FR 65197, Oct. 31, 2008]

§ 111.40–5 Enclosure.

Each panelboard must have a noncombustible enclosure that meets §§ 111.01–7 and 111.01–9.

[CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.40–7 Location.

Each panelboard must be accessible but not in a bunker or a cargo hold, except a cargo hold on a roll-on/roll-off vessel.

[CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.40–9 Locking device.

The door of each panelboard enclosure that is accessible to any passenger must have a locking device.

§ 111.40–11 Numbered switching unit and panelboard directory.

(a) Each panelboard switching unit must be numbered.

(b) Each panelboard must have:

(1) A circuit directory cardholder; and

(2) A circuit directory that has:

(i) The circuit designation of each circuit;

(ii) A description of the load of each circuit; and

(iii) The rating or setting of the overcurrent protective device for each circuit.

§ 111.40–13 Rating.

Each panelboard must have a current rating not less than the feeder circuit capacity.

§ 111.40–15 Overcurrent device.

The total load on any overcurrent device located in a panelboard must not exceed 80 percent of its rating if, in normal operation, the load will continue for 3 hours or more; except if the assembly, including the overcurrent device, is rated for continuous duty at 100% of its rating.

Subpart 111.50—Overcurrent Protection

§ 111.50–1 Protection of equipment.

Overcurrent protection of electric equipment must meet the following listed subparts of this chapter:

(a) Appliances, Subpart 111.77.

(b) Generators, Subpart 111.12.

(c) Motors, motor circuits, and controllers, Subpart 111.70.

(d) Transformers, Subpart 111.20.

§ 111.50–2 Systems integration.

The electrical characteristics of each overcurrent protective device must be compatible with other devices and its coordination must be considered in the design of the entire protective system.

NOTE TO § 111.50–2: The electrical characteristics of overcurrent protective devices may differ between standards. The interchangeability and compatibility of components complying with differing standards cannot be assumed.

[CGD 94–108, 61 FR 28279, June 4, 1996]

§ 111.50–3 Protection of conductors.

(a) *Purpose.* The purpose of overcurrent protection for conductors is to open the electric circuit if the current